Research Proposal of the Thesis Entitled

Oral Health Status and Treatment Needs and Oral Health Barriers Among Factory Workers in District Gandhinagar Gujarat

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By

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INTRODUCTION

Good health is a fundamental goal for people and the society. The basic growth of nation is depends upon the productivity and health of its people. According to WHO "a state of complete, physical mental and social well-being and not merely the absence of disease or infirmity".[1]

Oshikohji et al.2 believed that oral health, as previously stated, is an intrinsic aspect of overall health and has a vital role in increasing quality of life. The oral cavity is susceptible to occupational exposures which equally affects the hard and soft tissues of oral cavity.

Tatiana et al.[3] noted how environmental threats lead to poor oral health in various occupations, since the mouth cavity is a port of entry for many diseases and has several distinguishing characteristics that make it particularly vulnerable to occupational diseases.

The study conducted by Abbas et al.[4] in Telangana district on Underground Coal Mine Workers emphasized the prevalence of poor oral conditions among coal workers which requires immediate intervention.

There is little published literature on the dental health of factory workers. The goal of this research is to evaluate factory workers' oral health status and treatment needs, as well as to offer a foundation for planning the community oral health services for factory workers in future.

STATEMENT OF PROBLEM

It has been observed that the factory workers have high prevalence of oral diseases because of working conditions.

CLINICAL IMPLICATION OF THE STUDY

Previous study has shown that the factory workers had poor oral health habits, increased prevalence of tobacco use, and high prevalence of dental problems like Dental caries, Periodontal diseases and dental wasting diseases.

AIM

To evaluate the oral health status, treatment needs and oral health barriers among factory workers in Gandhinagar district Gujarat.

OBJECTIVES

1. Assessment of periodontal status of Factory workers
2. Assessment of Dental Caries status of Factory workers
3. Assessment of oral mucosal lesion prevalence among Factory workers.
4. Assessment of oral Hygiene methods used by Factory workers
5. Assessment of adverse oral habits among Factory workers
6. Assessment of sugar taking habits of Factory workers
7. Assessment of treatment needs of Factory workers

HYPOTHESIS

Proposed Hypothesis

- There will be significant difference in the oral health problem among different types of factory workers

Null Hypothesis

- There will be no difference in the oral health problem among different types of factory workers

REVIEW OF LITERATURE

Solanki J, Gupta S & Chand S[5] (2014) had done study titled **"Oral Health of Stone Mine Workers of Jodhpur City, Rajasthan, India"** studied caries and periodontal health in mine workers, and the relationship of wasting diseases and years of work experience. Total 510 males were included in the study. Clinical oral exams were performed to find out periodontal disease,

tooth decay, & wasting diseases in the participants. Workers' ages fell between 17 to 56 years; the prevalence of dental caries was 74%, with a mean DMFT index of 2.89. Approximately 6% of workers were having deep periodontal pocket (≥ 6 mm).

Abdulla and Al-Waheb[6] (2014) studied the prevalence of dental attrition in the age group of 25-55 years in 95 cement factory workers and compared them with 97 workers of other industries. Smith and Knight criteria was used to measure the dental attrition. 84% cement factory workers were suffering from the dental attrition in comparison to 38% of the control group and the difference was statistically significant. The atmosphere in which the workers work was associated to dental wear.

Singh K et al.[7] (2015) studied and compared the oral health of production line workers and administrative staff in Western Uttar Pradesh sugar mills. A research was done at four government-aided and four private sugar mills. A multistage sampling process was used to choose a total of six hundred sugar industry workers. The DMFT for production and non-production line personnel was 7.67±2.99 and 0.15±1.34, respectively (p=0.001). 80% percent of production line workers had a maximum CPI score of 2, compared to 63% of administrative staff however the result was statistically non-significant. They discovered that dental health was significantly worse among sugar mill production line workers than among administrative staff.

Abbas I et al.[4] (2016) evaluated the dental condition of underground coal miners, oral hygiene behaviors, and nicotine and alcohol use. They performed cross-sectional research on coal mine workers in India using the standards outlined in the Oral health Performa given by WHO 2013. The study involved 356 workers. 90% of the subjects used smoke or drank alcohol. More than half (55.6%) of the study individuals had dental caries. Approximately 50% of the population had untreated dental caries, whereas 25% of the population had missing teeth. More than 90% of the population were suffering from periodontal diseases and there was high prevalence of dental caries and other traumatic injuries that needed emergency care.

Solanki S et al.[8] (2019) studied the oral health status of 3290 rubber industry workers in India. Tobacco use and Oral health screening was done with using modified Oral health Performa given by WHO (1997). There was a higher frequency of tobacco use (78.28%) in both smoking and

smokeless modes. Periodontal disease and oral mucosal lesions were prevalent among the study population. leukoplakia was the most common mucosal lesion followed by OSMF with around 5% prevalence among the 50–60 years age group.

Kumar A et al.,[9] (2019) investigated the incidence of oral diseases and adverse oral habits among workers of rubber industry in Haryana. The study was conducted among 3290 workers aged 19 to 60. The oral health checkup was performed using Oral health performa given by WHO (1997). There was a higher frequency of tobacco use (78.28%) in both smoking and smokeless modes. Periodontal disease and oral mucosal lesions were prevalent among the study population at 87.4% and 41.24%, respectively.

METHODOLOGY

Inclusion Criteria:

i. People who will be present on campus during the camp days
ii. People working in factories

Exclusion Criteria:

i. Patients with systemic disease
ii. Patients less than 18 years and more than 60 years
iii. Participants who are not willing to participate

Informed Consent

Written authorization will be acquired from the Authorities of the Factories.

Participants in the study will be asked to provide written informed permission prior to assessment.

Study Design

- The proposed will be descriptive in nature. The research will be carried out approval from the authorities.
- Multistage random sampling will used. The factories will be randomly chosen and Factory workers will be chosen at random from a list of factory employees.
- A thorough weekly plan will be established in advance with approval from individual study centres.
- The field team will consist of one PHD student, one intern for oral health check-up

and one worker of social science background that will complete the field work.

- The examination of maximum 10 participants will be done during the study
- Aseptic procedures will be followed during the clinical examination.
- Only Autoclaved instrument will be used in the study. The required amount of instruments will be autoclaved in the department and will be taken to the factory daily.
- The test will take place in selected factories, with subjects seated on stools and the Dentist standing in 10 o'clock position, using natural sunlight or artificial lighting.

Instruments

The following instruments and supplies were used in sufficient number for clinical examination.

Mouth mirrors

CPI Probes

Tweezers

Cotton rolls

Kidney trays

Disposable gloves & mouth masks

Sterilized Containers

Clinical Examination

WHO Oral Health questionnaire for adult (2013) was taken in study to assess the habits of participants. The clinical examination of the patients had been done according to WHO Oral Health Assessment Form for Adults, 2013.[10]

Sample Size Calculation:

The sample size was measured using the formula:

$$n = \frac{Z^2 \times P(1-P)}{m^2}$$

The Expected frequency of periodontal disease was 50% and 95% Confidence Interval (C.I.) was used to measure sample size.

The minimum calculated sample size was 384. Multistage random sampling was used. Therefore final sample size calculated was 768.

Data analysis

The pre-coded survey form was used in the study. The data entry will be done in MS excel and will be uploaded in SPSS version 22.0. The preparation of results will be done using SPSS (version 22.0). The level of significance was kept at $P \leq 0.05$.

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